

## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application.

### **Listing of Claims:**

1. (Currently Amended) An image processing apparatus, comprising:  
a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which image data is divided, the compressed code being encoded block by block; and  
~~a rendering control unit to cause one or more of the blocks corresponding to a rendering region of a display unit to be extracted based on a signal indicating the rendering region of the display unit, and cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression part and rendered on [[a]] the display unit, the code corresponding to at least one of the blocks that is renderable in a rendering region of the display unit.~~
2. (Currently Amended) An image processing apparatus, comprising:  
a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which image data is divided, the compressed code being encoded block by block; and  
~~a rendering control unit to cause one or more of the blocks corresponding to a rendering region of a display unit to be extracted based on a signal indicating the rendering region of the display unit, and cause a first part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression part and rendered on [[a]] the display unit, the first code corresponding to at least one of the blocks that is renderable in a rendering region of the display unit, and thereafter, causes to cause a second part of the compressed code to be decompressed, the second part of the compressed code corresponding to at least one of the blocks that is outside the rendering region.~~

3. (Currently Amended) An image processing apparatus, comprising:

a block decompression unit to decompress, block by block, a compressed code formed of a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

a rendering control unit to specify ~~an area to be rendered of the image and cause the specified area to be rendered on a rendering region of a display unit and cause rendering to be performed on the display unit~~;

a block extraction unit to receive a ~~rendering area~~ signal indicating the area to be rendered on ~~the rendering region of the display unit from the rendering control unit, and extract a block one or more of the blocks corresponding to the an area to be rendered of the image from the blocks of the compressed code corresponding to the rendering region based on the received signal~~;

a rendering area block decompression unit to cause the block decompression unit to decompress part of the compressed code that corresponds to the extracted ~~block one or more of the blocks~~;

a decompressed image storage unit to store ~~part the area to be rendered~~ of the image that corresponds to the decompressed part of the compressed code;

a rendering enabling signal output unit to output to the rendering control unit a rendering enabling signal indicating completion of decompression of the area to be rendered ~~of the image after the decompression of the part of the compressed code is completed; and~~

a specified area rendering unit to receive the rendering enabling signal from the rendering enabling signal output unit and cause the ~~part area to be rendered~~ of the image stored in the decompressed image storage unit to be rendered on the display unit.

4. (Currently Amended) An image processing apparatus that, in decompressing a compressed code, ~~decompresses part of the compressed code that corresponds to a block of data of an image that corresponds to an area of the image that is to be rendered in a rendering region of a display unit, and renders the decompressed part of the compressed code before decompressing the remaining part of the compressed code, the image processing apparatus comprising:~~

a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

a rendering control unit to cause one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of a display unit to be extracted based on a signal indicating the rendering region of the display unit, and to cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression unit and rendered on the display unit before causing a remaining part of the compressed code to be compressed;

a rendered image change instruction unit to give an instruction to change the area to be rendered of the image from a first area to a second area of the image; and

a changed image rendering unit to, when the instruction is given by the rendered image change instruction unit, decompress part of the compressed code that corresponds to a block one or more of the blocks of the data of the image that corresponds correspond to the second area of the image, and render the second area of the image in the rendering region of the display unit.

5. (Original) The image processing apparatus as claimed in claim 4, further comprising a predicted block decompression unit to predict an area of the image to which the area to be rendered is changed from the first area based on the instruction given by the rendered image change instruction unit, and decompress, in advance, part of the compressed code that corresponds to a block of the data of the image that corresponds to the predicted area,

wherein the changed image rendering unit renders the predicted area of the image in the rendering region when the block corresponding to the predicted area is identical to the block corresponding to the second area.

6. (Original) The image processing apparatus as claimed in claim 5, further comprising a rendering position change unit to change the area to be rendered,

wherein the predicted block decompression unit predicts the area of the image to which the area to be rendered is changed from the first area based on a characteristic of the rendering position change unit when the rendered image change instruction unit is based on the rendering position change unit.

7. (Original) The image processing apparatus as claimed in claim 6, wherein, when the rendering position change unit performs pixel-by-pixel scrolling using a scroll bar, the predicted block decompression unit predicts that a block existing in a first direction from the first area is a next block to be rendered, the first direction being perpendicular to a second direction in which the scrolling has been performed to the first area.

8-15. (Cancelled)

16. (Original) The image processing apparatus as claimed in claim 4, wherein the block employed as a unit of dividing the image is a tile.

17. (Original) The image processing apparatus as claimed in claim 16, wherein the block employed as a unit of dividing the image is identical to a value defined by a profile.

18. (Original) The image processing apparatus as claimed in claim 4, wherein the block employed as a unit of dividing the image is a precinct.

19. (Original) The image processing apparatus as claimed in claim 18, wherein the block employed as a unit of dividing the image is identical to a value defined by a profile.

20. (Original) The image processing apparatus as claimed in claim 4, wherein the block employed as a unit of dividing the image is a code block.

21. (Original) The image processing apparatus as claimed in claim 20, wherein the block employed as a unit of dividing the image is identical to a value defined by a profile.

22. (Currently Amended) An image display apparatus, comprising:  
a display unit to display information;  
a receiver unit to receive via a network a compressed code formed of a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block; and  
an image processing apparatus, comprising:  
a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which image data is divided, the compressed code being encoded block by block; and

a rendering control unit to cause one or more of the blocks corresponding to a rendering region of the display unit to be extracted based on a signal indicating the rendering region of the display unit, and cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression part and rendered on [[a]] the display unit, the image processing apparatus decompressing the received compressed code and causing the received compressed code to be rendered on the display unit.

23. (Currently Amended) An image display apparatus, comprising:

    a display unit to display information;

    a receiver unit to receive via a network a compressed code formed of a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block; and

    an image processing apparatus, comprising:

        a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which image data is divided, the compressed code being encoded block by block; and

        a rendering control unit to cause one or more of the blocks corresponding to a rendering region of the display unit to be extracted based on a signal indicating the rendering region of the display unit, and cause a first part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression part and rendered on [[a]] the display unit, the first code corresponding to at least one of the blocks that is renderable in a rendering region of the display unit, and thereafter, causes to cause a second part of the compressed code to be decompressed, the second part of the compressed code corresponding to at least one of the blocks that is outside the rendering region, the image processing apparatus decompressing the received compressed code and causing the received compressed code to be rendered on the display unit.

24. (Currently Amended) An image display apparatus, comprising:

    a display unit to display information;

    a receiver unit to receive via a network a compressed code formed of a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block; and

    an image processing apparatus, comprising:

a block decompression unit to decompress, block by block, a compressed code formed of a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

a rendering control unit to specify an area to be rendered of the image and cause the specified area to be rendered on a rendering region of the a display unit and cause rendering to be performed on the display unit;

a block extraction unit to receive a rendering area signal indicating the area to be rendered on the rendering region of the display unit from the rendering control unit, and extract a block one or more of the blocks corresponding to the an area to be rendered of the image from the blocks of the compressed code corresponding to the rendering region based on the received signal;

a rendering area block decompression unit to cause the block decompression unit to decompress part of the compressed code that corresponds to the extracted block one or more of the blocks;

a decompressed image storage unit to store part the area to be rendered of the image that corresponds to the decompressed part of the compressed code;

a rendering enabling signal output unit to output to the rendering control unit a rendering enabling signal indicating completion of decompression of the area to be rendered of the image after the decompression of the part of the compressed code is completed; and

a specified area rendering unit to receive the rendering enabling signal from the rendering enabling signal output unit and cause the part area to be rendered of the image stored in the decompressed image storage unit to be rendered on the display unit, the image processing apparatus decompressing the received compressed code and causing the received compressed code to be rendered on the display unit.

25. (Currently Amended) An image display apparatus, comprising:

a display unit to display information;

a receiver unit to receive via a network a compressed code formed of a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block; and

an image processing apparatus that, in decompressing a compressed code, decompresses part of the compressed code that corresponds to a block of data of an image that corresponds to an area of the image that is to be rendered in a rendering region of a display unit, and renders the

~~decompressed part of the compressed code before decompressing the remaining part of the compressed code, the image processing apparatus comprising:~~

~~a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;~~

~~a rendering control unit to cause one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of the display unit to be extracted based on a signal indicating the rendering region of the display unit, and to cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression unit and rendered on the display unit before causing a remaining part of the compressed code to be compressed;~~

a rendered image change instruction unit to give an instruction to change the area to be rendered ~~of the image~~ from a first area to a second area of the image; and

a changed image rendering unit to, when the instruction is given by the rendered image change instruction unit, decompress part of the compressed code that corresponds to ~~a block one or more of the blocks~~ of the data of the image that ~~corresponds correspond~~ to the second area of the image, and render the second area of the image in the rendering region ~~of the display unit~~.

26. (Currently Amended) An image display apparatus, comprising:

a display unit to display information;

an image compression unit to divide data for an image into a plurality of blocks and compresses and encodes each of the blocks into a compressed code; and

an image processing apparatus, comprising:

a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which image data is divided, the compressed code being encoded block by block; and

~~a rendering control unit to cause one or more of the blocks corresponding to a rendering region of the display unit to be extracted based on a signal indicating the rendering region of the display unit, and cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression part and rendered on [[a]] the display unit, the image processing apparatus decompressing the compressed code~~

generated by the image compression unit and causing the compressed code to be rendered on the display unit.

27. (Currently Amended) An image display apparatus, comprising:

- a display unit to display information;
- an image compression unit to divide data for an image into a plurality of blocks and compresses and encodes each of the blocks into a compressed code; and
- an image processing apparatus, comprising:
  - a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which image data is divided, the compressed code being encoded block by block; and
  - a rendering control unit to cause one or more of the blocks corresponding to a rendering region of the display unit to be extracted based on a signal indicating the rendering region of the display unit, and cause a first part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression part and rendered on [[a]] the display unit, the first code corresponding to at least one of the blocks that is renderable in a rendering region of the display unit, and thereafter, causes to cause a second part of the compressed code to be decompressed, the second part of the compressed code corresponding to at least one of the blocks that is outside the rendering region, the image processing apparatus decompressing the compressed code generated by the image compression unit and causing the compressed code to be rendered on the display unit.

28. (Currently Amended) An image display apparatus, comprising:

- a display unit to display information;
- an image compression unit to divide data for an image into a plurality of blocks and compresses and encodes each of the blocks into a compressed code; and
- an image processing apparatus, comprising:
  - a block decompression unit to decompress, block by block, a compressed code formed of a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

a rendering control unit to specify an area to be rendered of the image and cause the specified area to be rendered on a rendering region of the display unit and cause rendering to be performed on the display unit;

a block extraction unit to receive a rendering area signal indicating the area to be rendered on the rendering region of the display unit from the rendering control unit, and extract a block one or more of the blocks corresponding to the an area to be rendered of the image from the blocks of the compressed code corresponding to the rendering region based on the received signal;

a rendering area block decompression unit to cause the block decompression unit to decompress part of the compressed code that corresponds to the extracted block one or more of the blocks;

a decompressed image storage unit to store part the area to be rendered of the image that corresponds to the decompressed part of the compressed code;

a rendering enabling signal output unit to output to the rendering control unit a rendering enabling signal indicating completion of decompression of the area to be rendered of the image after the decompression of the part of the compressed code is completed; and

a specified area rendering unit to receive the rendering enabling signal from the rendering enabling signal output unit and cause the part area to be rendered of the image stored in the decompressed image storage unit to be rendered on the display unit, the image processing apparatus decompressing the compressed code generated by the image compression unit and causing the compressed code to be rendered on the display unit.

29. (Currently Amended) An image display apparatus, comprising:

a display unit to display information;

an image compression unit to divide data for an image into a plurality of blocks and compresses and encodes each of the blocks into a compressed code; and

an image processing apparatus that, in decompressing a compressed code, decompresses part of the compressed code that corresponds to a block of data of an image that corresponds to an area of the image that is to be rendered in a rendering region of a display unit, and renders the decompressed part of the compressed code before decompressing the remaining part of the compressed code, the image processing apparatus comprising:

a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

a rendering control unit to cause one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of the display unit to be extracted based on a signal indicating the rendering region of the display unit, and to cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression unit and rendered on the display unit before causing a remaining part of the compressed code to be compressed;

a rendered image change instruction unit to give an instruction to change the area to be rendered of the image from a first area to a second area of the image; and

a changed image rendering unit to, when the instruction is given by the rendered image change instruction unit, decompress part of the compressed code that corresponds to a block, one or more of the blocks of the data of the image that corresponds correspond to the second area of the image, and render the second area of the image in the rendering region of the display unit, the image processing apparatus decompressing the compressed code generated by the image compression unit and causing the compressed code to be rendered on the display unit.

30. (Currently Amended) An image processing method for decompressing, block by block, a compressed code formed of a plurality of blocks into which image data is divided, the compressed code being encoded block by block, the image processing method comprising:

extracting one or more of the blocks corresponding to a rendering region of a display unit based on a signal indicating the rendering region of the display unit; and

decompressing a part of the compressed code corresponding to the extracted one or more of the blocks and rendering the decompressed code on a-the display unit, the code corresponding to at least one of the blocks that is renderable in a rendering region of the display unit.

31. (Currently Amended) An image processing method for decompressing, block by block, a compressed code formed of a plurality of blocks into which image data is divided, the compressed code being encoded block by block, the image processing method comprising:

(a) extracting one or more of the blocks corresponding to a rendering region of a display unit based on a signal indicating the rendering region of the display unit and decompressing a

first code corresponding to the extracted one or more of the blocks and rendering the first code on a display unit; the first code corresponding to at least one of the blocks that is renderable in a rendering region of the display unit; and

(b) decompressing a second code corresponding to at least one of the blocks which one is outside the rendering region after decompressing the first code and rendering the first code on a display unit.

32. (Currently Amended) An image processing method that, in decompressing a compressed code, decompresses a part of the compressed code that corresponds to a block of data of an image that corresponds to an area of the image that is to be rendered on a display unit, and renders the decompressed part of the compressed code before decompressing the remaining part of the compressed code, the image processing method comprising:

(a) decompressing, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

(b) causing one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of a display unit to be extracted based on a signal indicating the rendering region of the display unit, and causing a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed and rendered on the display unit before causing a remaining part of the compressed code to be compressed;

(a)(c) giving an instruction to change the area to be rendered of the image from a first area to a second area of the image; and

(b)(d) decompressing part of the compressed code corresponding to one or more of the blocks a block of the data of the image that corresponds to the second area of the image and rendering the second area of the image when the instruction is given by giving the instruction to change the area to be rendered.

33. (Original) The image processing method as claimed in claim 32, further comprising predicting an area of the image to which the area to be rendered is changed from the first area based on the instruction given by giving the instruction to change the area to be rendered, and decompressing, in advance, part of the compressed code corresponding to a block of the data of the image that corresponds to the predicted area,

wherein decompressing part of the compressed code renders the predicted area of the image when the block corresponding to the predicted area is identical to the block corresponding to the second area.

34. (Currently Amended) An article of manufacture having one or more computer-readable recording media storing a program which, when executed by a computer, causes the computer to execute an image processing method for decompressing, block by block, a compressed code formed of a plurality of blocks into which image data is divided, the compressed code being encoded block by block, the image processing method comprising:

extracting one or more of the blocks corresponding to a rendering region of a display unit based on a signal indicating the rendering region of the display unit; and

decompressing a part of the compressed code corresponding to the extracted one or more of the blocks and rendering the decompressed code on a-the display unit, the code corresponding to at least one of the blocks that is renderable in a rendering region of the display unit.

35. (Currently Amended) An article of manufacture having one or more computer-readable recording media storing a program which, when executed by a computer, causes the computer to execute an image processing method for decompressing, block by block, a compressed code formed of a plurality of blocks into which image data is divided, the compressed code being encoded block by block, the image processing method comprising:

(a) extracting one or more of the blocks corresponding to a rendering region of a display unit based on a signal indicating the rendering region of the display unit and decompressing a first code corresponding to the extracted one or more of the blocks and rendering the first code on a-the display unit, the first code corresponding to at least one of the blocks that is renderable in a rendering region of the display unit; and

(b) decompressing a second code corresponding to at least one of the blocks that is outside the rendering region after decompressing the first code and rendering the first code.

36. (Currently Amended) An article of manufacture having one or more computer-readable recording media storing a program which, when executed by a computer, causes the computer to execute an image processing method ~~that, in decompressing a compressed code, decompresses part of the compressed code that corresponds to a block of data of an image that corresponds to an area of the image that is to be rendered on a display unit, and renders the decompressed part of~~

the compressed code before decompressing the remaining part of the compressed code, the image processing method comprising:

(a) decompressing, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

(b) causing one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of a display unit to be extracted based on a signal indicating the rendering region of the display unit, and causing a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed and rendered on the display unit before causing a remaining part of the compressed code to be compressed;

(a)(c) giving an instruction to change the area to be rendered of the image from a first area to a second area of the image; and

(b)(d) decompressing part of the compressed code corresponding to one or more of the blocks of the data of the image that corresponds to the second area of the image and rendering the second area of the image when the instruction is given by giving the instruction to change the area to be rendered.

37. (Original) The article of manufacture as claimed in claim 36, wherein:

the image processing method further comprises predicting an area of the image to which the area to be rendered is changed from the first area based on the instruction given by giving the instruction to change the areas to be rendered, and decompressing, in advance, part of the compressed code corresponding to a block of the data of the image that corresponds to the predicted area; and

wherein decompressing part of the compressed code corresponding to the block renders the predicted area of the image when the block corresponding to the predicted area is identical to the block corresponding to the second area.

38. (Currently Amended) An image display system including a server computer and a client computer connected to the server computer via a network, the image display system comprising:

a block decompression unit to decompress, block by block, a compressed code formed of a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

a rendering control unit to specify an area to be rendered of the image and cause the specified area to be rendered on a rendering region of a display unit and cause rendering to be performed on the display unit;

a block extraction unit to receive a rendering area signal indicating the area to be rendered on the rendering region of the display unit from the rendering control unit, and extract a block one or more of the blocks corresponding to the an area to be rendered of the image from the blocks of the compressed code corresponding to the rendering region based on the received signal;

a rendering area block decompression unit to cause the block decompression unit to decompress part of the compressed code which part corresponds to the extracted block one or more of the blocks;

a decompressed image storage unit to store part the area to be rendered of the image that corresponds to the decompressed part of the compressed code;

a rendering enabling signal output unit to output to the rendering control unit a rendering enabling signal indicating completion of decompression of the area to be rendered of the image after the decompression of the part of the compressed code is completed; and

a specified area rendering unit to receive the rendering enabling signal from the rendering enabling signal output unit and cause the part area to be rendered of the image stored in the decompressed image storage unit to be rendered on the display unit, the image processing apparatus decompressing the compressed code generated by the image compression unit and causing the compressed code to be rendered on the display unit.

39. (Currently Amended) An image display system including a server computer and a client computer connected to the server computer via a network, the image display system, in decompressing a compressed code, decompressing part of the compressed code that corresponds to a block of data of an image that corresponds to an area of the image that is to be rendered in a rendering region of a display unit, and rendering the decompressed part of the compressed code before decompressing the remaining part of the compressed code, the image display system comprising:

a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which data of an image is divided, the compressed code being encoded block by block;

a rendering control unit to cause one or more of the blocks corresponding to an area to be rendered of the image corresponding to a rendering region of a display unit to be extracted based on a signal indicating the rendering region of the display unit, and to cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression unit and rendered on the display unit before causing a remaining part of the compressed code to be compressed;

a rendered image change instruction unit to give an instruction to change the area to be rendered of the image from a first area to a second area of the image; and

a changed image rendering unit to, when the instruction is given by the rendered image change instruction unit, decompress part of the compressed code that corresponds to a block one or more of the blocks of the data of the image that corresponds correspond to the second area of the image, and renders render the second area of the image in the rendering region of the display unit.

40. (Currently Amended) The image display system as claimed in claim [[43]] 39, further comprising a predicted block decompression unit to predict an area of the image to which the area to be rendered is changed from the first area based on the instruction given by the rendered image change instruction unit, and decompress, in advance, part of the compressed code that corresponds to a block of the data of the image that corresponds to the predicted area,

wherein the changed image rendering unit renders the predicted area of the image in the rendering region when the block corresponding to the predicted area is identical to the block corresponding to the second area.

41. (Currently Amended) An image processing system, comprising:

a display unit to display information;  
a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which image data is divided, the compressed code being encoded block by block; and

a rendering control unit to cause one or more of the blocks corresponding to a rendering region of the display unit to be extracted based on a signal indicating the rendering region of the display unit, and cause a part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression part and rendered on [[a]] the display unit, the code corresponding to at least one of the blocks that is renderable in a rendering region of the display unit.

42. (Currently Amended) An image processing system, comprising:

- a display unit to display information;
- a block decompression unit to decompress, block by block, a compressed code having a plurality of blocks into which image data is divided, the compressed code being encoded block by block; and

a rendering control unit to cause one or more of the blocks corresponding to a rendering region of the display unit to be extracted based on a signal indicating the rendering region of the display unit, and cause causes a first part of the compressed code corresponding to the extracted one or more of the blocks to be decompressed by the block decompression part and rendered on [[a]] the display unit, the first code corresponding to at least one of the blocks that is renderable in a rendering region of the display unit, and thereafter, causes to cause a second part of the compressed code to be decompressed, the second part of the compressed code corresponding to at least one of the blocks that is outside the rendering region.